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243 the young rice shoots as Chinese farmers do. On the average, the
242 amount of labor expended on a unit of land is about the same in Sinkiang as in China proper, but the yield is somewhat less.

Cotton is the most important commercial crop in Sinkiang. It is
248 known to have been grown in Turfan as early as the T'ang Dynasty (618–907). By 1750, it was used to pay taxes in Yarkand.[15] In 1776 it was described as ranking next to the wheat crop in importance,[16] and it has been one of the leading exports to Russia since 1890. The cotton belt lies south of the Tien Shan. Turfan and Merket (on the northern edge of the Yarkand oasis) lead in production, followed by Yarkand, Khotan, Kashgar, and Aksu.

Two varieties are grown, native and American. After failure in experimenting with Sea Island cotton in Tashkent in the 1870's, two Russian merchants named Belyakov and Lakhtin experimented very successfully with the Upland variety in 1883. After 1885 American species began to supplant the native type in Ferghana and Samarkand. A few years later Russian dealers set out to improve the quality grown in Sinkiang by distributing American seed.[17] Up to 1942 large quantities of seed were imported yearly from the Soviet Union, especially two varieties of American origin called "Shredder" and "Novrozkii." From American long-staple varieties of 25 to 29 mm., 32-count yarns can be spun, while the short-staple Inner Asian variety can be used only for 24-count yarns. In 1943, 100,000 acres of cotton were planted, 73 per cent with native cotton and 23 per cent with seed of the American varieties.

231 Silk is a second ancient crop of commercial importance. The
439 most noted silk oases have always been Khotan and Yarkand.
288 Part of the raw silk they produce is manufactured on the spot into fabrics which have greatly declined in value and beauty in recent years, and the rest is exported to the Soviet Union and

[15] Kuropatkin, p. 126.

[16] Chuan Yuan, *Geography of the Western Regions*, written 1776, published 1818, chuan 1, p. 1 (in Chinese).

[17] "Economy in Sinkiang," *Chinese Weekly Economic Bulletin*, Chinese Government Bureau of Economic Information, pp. 16, 109, April 25, 1925.

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India. The silkworms are fed on leaves from mulberry trees grown along the roadsides; there are also a few groves of wild mulberry. In recent years the Russians attempted to improve quality by importing eggs of the Baghdad, Oro, and Ascoli varieties. Silk production reached 350,000 kg. in 1942, but fell drastically to 100,000 kg. in 1943.

The basic producing unit in oasis agriculture is the family group living together under one roof. This group often includes married children, which makes it slightly larger than the average farm family in China. In Central China (Wukiang) an average farm family consists of four persons,[18] in North China (Paoting) of six persons,[19] in Northwest China (Kansu) of 6.87 persons.[20] A field survey in Khotan showed 7.95 persons, and in Kashgar a typical family consisted of an old couple, two sons, and three daughters-in-law. In the tiny oasis of Kumish a similar family consisted of parents, three sons, two daughters-in-law, and a daughter and her husband, or nine in all.

While farms in the Tarim Basin average from 4½ to 6 acres in size, larger than the 4.2 acres given for China proper,[21] the larger size of the families means, in Khotan for instance, only .58 acres per capita as against .68 acres in China proper.

There are many farms, of course, which are much smaller than the overall average. The field survey referred to above, covering sixty-five households in two villages in the Khotan oasis, showed that the smallest farm was 1.08 acres and the largest farm was 18 acres. A further breakdown of the figures shows that rich peasants in this group of sixty-five households had average holdings of 11.1 acres, middle peasants 5.7 acres, and poor peasants 2.8 acres.[22] The farms of the poor peasants are too small for the

[18] Fei Hsiao-tung, *Peasant Life in China*, New York, 1939, p. 29.

[19] Farm survey conducted by the Institute of Social Sciences, Academia Sinica.

[20] Farm survey conducted by the National Resources Commission of China.

[21] Geo. B. Cressey, *Asia, Lands and Peoples*, New York, 1944, p. 84.

[22] Uighur farmers, however, do not measure their land by its size but in terms of the amount of seed which can be sown on it. The Uighur measure for this purpose is the *charak*, which varies both from place to place and according to the seed measured. In Kashgar, the *charak* equals 24 pounds of

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161 About two-thirds of the total area of Sinkiang is uninhabited.
311 In 1946 the number of farm households was 344,000 and the average
number of acres per farm was around 7.1. (Cressey, Land of the
[114] 500 Million, p. 105. This figure, according to other sources,
is rather high. These sources give a figure of from 0.5 to three
acres per farm.) The total amount of cultivated land was 2,455,000
acres or roughly one per cent of the total acreage of the region.
The greatest concentration of population is south of the Tienshan,
or more precisely, in the southwestern corner of the province near
the Soviet border. These are the districts of Khotan, Aksu, and
Yarkand which contain over two-thirds of the population of the
whole province. North of the Tienshan, the greatest concentra-
tion is in the Ili valley.

243 According to the figures supplied by Owen Lattimore, the
433 annual wheat crop of Sinkiang before the Communist conquest was
about 253,000 tons, about forty-four per cent of the total crop of
grain, beans, and seeds. Corn reached 331,000 tons or twenty-
eight per cent. Rice was about 71,000 tons or six per cent, and
sesame, rapeseed, and linseed accounted for 71,000 tons or six
[244] per cent. Barley, kaoliang, sorghum millet, beets, and peas
amounted to 119,000 tons or ten per cent. Millet, soybean, and
green beans totalled 71,000 tons or six per cent. Total agricultural
output was 916,000 tons. (Pivot of Asia, p. 167.)

243 Winter wheat is grown north of the Tienshan where, in spite
of the cold, the seeds are protected by the cover of snow; only
spring wheat can be grown south of the Tienshan, where lack of
snow cover exposes the seed to being frozen in the ground. Wheat
is tending to be displaced by rice in oasis fields because the fields
are highly alkaline. But the yield of rice is lower than that of
corn, because the Uighur farmers do not transplant the young rice
shoots as Chinese farmers do. Although the amount of labor
[461] expended on a unit of land is about the same in Sinkiang as in
[433] China Proper, the yield is somewhat less.

248 Cotton is the most important commercial crop in Sinkiang.
It was grown in Turfan as early as the T'ang Dynasty (618 -
907). Two varieties are raised: the native and the American.
In 1943, 100,000 acres of cotton were planted, seventy-three
per cent with native cotton and twenty-three per cent with seed
288 of the American varieties. Silk is also an ancient crop of com-
433 mercial importance. Its production reached 350,000 kg. in 1942
but fell drastically to 100,000 kg. in 1943.

592 The family group, living together under one roof, is the basic
241 producing unit in oasis agriculture. It often includes married
children, which makes it slightly larger than the average farm
family in China. While farms in the Tarim Basin average from
[423] 4.5 to six acres in size, larger than the 3.5 acres given for China
Proper, because the family in Sinkiang is larger, there is only

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*175 year exceeded 2,000,000 catties, or some 2,600,000 pounds.
288 There were twenty-five factories in other cities in Shensi,
474 of which number thirteen were in Sian, nine in Pao-chi, and one each in San-yuan, Ta-li and Pai-shui. Their output was also not disclosed, but their annual consumption of raw wool was reported as 720,000 catties ching, much smaller than that in
N
[433] Yu-lin. Besides, there were ten cooperatives in Sian and Pao-chi, which could produce 600,000 to 700,000 army blankets per year.
N
[471] In Ninghsia, there were five small factories with a total
[433] capital of CNC$230,000. They produced some CNC$1,200,000 worth of goods in 1941. All of them were using hand looms.
S
[288] In Sinkiang, there was one woolen factory in operation, but details are lacking. There is no report of woolen factories or cooperatives in Chinghai.

N 2. The cotton industry
*175 The development of cotton industry in the Northwest was
288 mainly stimulated by the Sino-Japanese War. Before 1937, there was not a single modern cotton factory in this area. But during the war, many factories had moved from the Japanese-occupied areas to Shensi, and many new ones were built there. In 1942, the total number of spindles exceeded 60,000, and the annual consumption of raw cotton was 130,000 piculs, about twelve percent of the total production of Shensi.

N 3. The machine tool industry
392 There were forty-five machine shops in Shensi, six in
S Kansu, and three in Sinkiang. The more important ones are as
[392] follows:

1. Hsi-ching Machine Factory, Sian, which was built around 1910 and equipped with fifty-five tool-making machines such as lathe, planing, drilling and pressing machines. Its annual capacity was as follows: four lathe, three water-pumping machines, ten iron looms, five cotton extracting machines, twenty ginning machines, five printing machines, and a number of paper-making machines. Besides, it also accepted orders for the repair of machinery and weapons of war.

2. Hsi-ching Machine Repairing Factory, Sian, the main job of which was to make auto parts. Its monthly output was 90 pistons, 2,500 piston rings and 180 gears, enough for the maintenance of eighty trucks.

3. An iron works, operated by the army, which turned out some twenty looms per month, and also basic machine tools.

4. The Northwest Machine Factory, which had more than eighty basic machine tools, such as lathe, planing machine, drilling machine, etc., was perhaps the largest machine shop in the Northwest, and its main task was to make looms and parts for the textile industry.

4. Sinkiang

473 Industrial development in Sinkiang is perhaps the fastest
175 in the entire Northwest. As early as 1950, four Sino-Soviet
177 joint-stock companies were established in Urumchi, of which three were industrial plants. They were: (1) Sino-Soviet Nonferrous Metals Company, (2) Sino-Soviet Rare Metals Company, (3) Sino-Soviet Petroleum Company and (4) Sino- Soviet Airlines. All the Soviet stocks were reportedly transferred to China at the end of 1954, but the Soviet technicians have remained there to help train the Chinese workers.

668 After the Communists took over, the Sinkiang Petroleum
175 Company has been greatly expanded. Its crude oil output in 1955 is
315 said to have been sixty-three percent higher than in 1954, and
473 deep testing wells were being sunk in five new districts in the Gobi Desert to investigate their oil reserves. The five districts are located in the Turfan and Dzungaria Basins in the Sinkiang-Uighur Autonomous Region.

175 Another important industrial plant in Sinkiang is the July
• 288 First Cotton Mill, which began production in 1952. In early 1955, 16,500 spindles and 600 looms were added, which will double the mill's cloth output. The total number of spindles was then over 30,000 and of looms, one thousand. This is the first modern textile mill built in Sinkiang, and it supplies the thirteen nationalities there with a rich variety of fabrics manufactured from the cotton grown in the province itself.

471 According to the province's initial plans, the investment in capital construction during 1955 is to be increased by over sixty percent as compared with 1954. A total of twelve construction jobs are to be newly built or rebuilt. Preparations are under
471 way for these works. Among the new projects are a modern
339 cement factory, a sulphuric acid factory, a small hydraulic
38 power plant and an oil pressing mill. The cement factory was
[372 expected to have its first stage of construction completed in
258] 1956. When completed, this factory will save the state a total of ten million yuan each year in the cost of transporting cement from China Proper. When the sulphuric acid factory starts production, it will supply all the raw material needed for printing and dyeing works by the July First Cotton Mill.

471 The eight units to be rebuilt in 1955 include the Liu-tao-wan
316 Colliery, the Sinkiang Machine Works, the Ceramic Factory,
392 and the First Cement Factory. When the underground tunnel of
339 the Liu-tao-wan Colliery is rebuilt, it will be possible to
323 produce more coal for the industries and local residents of Urumchi. The output of modern farming tools will be increased when the Sinkiang Machine Works is rebuilt. After a set of automatic equipment is added to the glass workshop of the Ceramic Factory, there will be nineteen additional kinds of new products to supply the market.

Five tractor repair works were under construction in 1955. Each plant will have sixteen or fifteen mechanized worships. When completed, they will be able to repair as many as 475 tractors and combine harvesters each year in addition to making other farm tools and spare parts.

There are scattered reports on other industrial developments in Sinkiang, such as: (1) the August First Iron and Steel Plant, (2) the October Motor Car Repair and Assembly Shop, (3) the Urumchi Automatic Electric Plant, (4) the modernized August First Flour Mill, (5) the Khotan Silk Factory, (6) Houcheng Airplane Manufacturing Factory, and (7) more than a dozen animal products processing plants, which process skins, furs and intestines for the purpose of exporting them to the Soviet Union. But detailed information on these projects is not available.

5. Handicrafts.

The foregoing analysis concerns itself with the development of modern industries in the Northwest under the Communist regime. But handicrafts still play a very important role in this area as they do in other parts of the country. According to a 1951 report, the main handicrafts in the Northwest were as follows:

(1) Cotton cloth. A side line of the peasant, it was produced practically everywhere in the area. However, the more important producing districts are: 1. Sian, Paochi, in Shensi, 2. Tienshui, Ho-hsi and Min-chin in Kansu, and 3. Turfan, toqsun and Aqsu in Sinkiang. In terms of quantities, the total annual output in Shensi is approximately 3,779,670 pieces; in Kansu, 3,505,760 pieces; in Sinkiang, 4,400,000 pieces.

(2) Pottery. The annual output of pottery in the Northwest amounts to over 4,000,000 pieces. Of that amount Shensi produces more than 3,000,000 pieces, Kansu, 500,000, Ninghsia, 200,000, and Sinkiang, 50,000. The more famous pottery-producing districts are: 1. Huang-pao-chen and Chen-lu-chen in Tung-chuan, Shensi, which have been famous since the Sung Dynasty, 2. Yaokai in Yung-teng, Kansu, 3. Ah-kan-chen, Lanchou, Kansu, and An-kou-yao, Hua-ting, Kansu. The production consists mainly of pots, bowls, tea-pots, plates and tea-cups.

(3) Paper. While paper is manufactured in many places in this area, the more important paper-producing districts are: 1. Nancheng (Han-chung), Shensi, 2. Khotan, Sinkiang, 3. K'ang-cheng and Tien-shui, Kansu, and 4. Ying-chuan, Ninghsia. The main varieties are as follows:

(a) The "rough-edge" paper. Usually used as a writing paper, it is produced and consumed mainly in Shensi. The annual output is about 192,490 bundles.

(b) The "Flax paper." It may be made of white or black flax,

and is used mainly for wrapping. The annual output of the white flax paper is about 966,870 bundles, and that of black flax paper is 3,982,480. Part of this is exported to Szechwan, Hankow and Anhwei.

(c) The "improved" paper. It is produced and consumed mainly in Kansu, at the rate of some 300,000 bundles per year.

(d) The "mulberry-skin" paper. It is produced and consumed mainly in Sinkiang, at the rate of some 565,977 bundles a year.

(4) Bamboo articles. A side-line of farmers, they are made in many places, especially in Hua-hsien and Han-chung, in Shensi and Min-hsien, in Kansu. The annual output is estimated as follows: (1)farming implements, 29,280 piculs, (2) sieves, 132,300, (3) large bamboo baskets, 480,000, and (4) small bamboo baskets, 27,000.

(5) Straw hats. Also a side-line of farmers, they are made in many places, especially in Feng-hsiang, Wei-nan, Lin-tung, and Chang-an, in Shensi. The annual output in Shensi alone exceeds 1,377,900 hats.

(6) Brooms. They are made mainly in the districts near Mount Chung-nan, such as Mei-hsien and Chang-an. The annual output exceeds 800,000 brooms.

(7) Straw mats. They are produced mainly in Sui-te, Shensi, Chang-i, Kansu and Ninghsia City, Ninghsia. The annual output exceeds 3,000,000 pieces.

(8) Wooden rakes. One of the main farming implements in the Northwest, they are made mainly in Chang-an, Pu-cheng and Tung-chuan, Shensi. The annual output is about 88,000 pieces.

(9) Iron utensils. They are produced mainly in Pao-chi and Feng-hsiang in Shensi, and Tienshui in Kansu. The annual output is about 76,000 counts.

(10) Carpets. Carpet-making is one of the main handicrafts in Sinkiang. The carpets come in various sizes, up to eight by sixteen feet. The annual output exceeds 10,000 square feet. Of that quantity, some six thousand square feet is exported to India, Afghanistan and Soviet Russia and the rest is sold locally or to other provinces in the Northwest.

6. Evaluation and Prospects.

For the time being, the Communists seem to have concentrated on two things in industrializing the Northwest, one being the cotton industry in Shensi and Sinkiang, and the other being the oil industry in Kansu, Sinkiang and Chinghai. From the economic point of view, these developments are not unnatural, because Shensi and Sinkiang have been famous for their raw cotton, and the oil reserve in China is largely located in the Northwest.

While the present industrial development in the Northwest may not appear so impressive, this area will probably become